

AMENDMENTS TO THE DRAWINGS

Three replacement drawing sheets are attached herewith. FIGURES 2-4 have been amended. FIGURE 1 contains no changes. No new matter has been added.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS"
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

REMARKS

Claims 1-5 and 7-24 are pending in the present application and currently stand rejected. Claim 24 has been amended to correct an informality. No new matter has been added.

Based on the amendments set forth above and the remarks set forth below, Applicants submit that Claims 1-5 and 7-24 are currently in condition for allowance. Accordingly, reconsideration and allowance of Claims 1-5 and 7-24 is respectfully requested.

Objections to the Drawings Under 37 C.F.R. 1.83(a)

The drawings are objected to under 37 CFR 1.83(a) as not showing every feature of the invention of the specified claims. Specifically, the figures were objected to for failing to show the element of the "first and second end edges" of the outer and inner circumferential walls. Applicants respectfully submit that FIGURES 2-4 show the claimed features as originally submitted. However, FIGURES 2-4 are presently amended to contain identifiers 40 and 42 that specifically reference the "first and second end edges", respectively, of the outer and inner circumferential walls. Additionally, the specification has also been amended at page 9, line 26, as originally submitted, to include the identifier numbers corresponding to the claimed structures. Applicants note that the upper edge 42 of the encapsulation, as described, constitutes the second end edges of the outer and inner circumferential walls of the encapsulation, as illustrated in the figures. Similarly, the lower edge 40 of the encapsulation, as described, constitutes the first end edges of the outer and inner circumferential walls of the encapsulation, as illustrated in the figures.

Applicants submit that FIGURES 1-4 comply with the requirements of 37 CFR 1.83(a). Reconsideration and withdrawal of this objection is respectfully requested.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESSSM
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

Objection to the Specification

Claim 24 is objected to for an informality. Specifically, the Examiner indicates that in line 15, the term "outer" should be changed to "inner". The claim has been amended according to the Examiner's suggestion. Reconsideration and withdrawal of this objection is respectfully requested.

Rejection of Claims 1, 18, and 24 Under 35 U.S.C. § 112, Second Paragraph

Claims 1-5 and 7-24 stand rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements. Specifically, the Examiner asserts that the specification indicates that a rubber strip is required to achieve a seal and concludes that Claims 1, 18, and 24 omit the essential element of a rubber strip to achieve a seal. Applicants respectfully disagree for at least the following reasons.

As a preliminary matter, the broader text to which the Examiner cites is quoted here for clarity.

The encapsulation 22 is essentially tight in the horizontal direction . . . [The] lower edge 40 fits tightly against the outer 8 and inner 9 cylindrical walls. The term "fits tightly against" relates to a reasonable degree of sealing that prevents a considerable flow of water vapour from passing. The necessary seal is established, *for example*, by means of a rubber strip.

Page 9, line 30 through page 10, line 2. Emphasis added. First, it is noted that a rubber strip is clearly provided as an *example* of a way to establish the necessary seal. Thus, it is implicit that the rubber strip is not an essential element, but that additional, alternative approaches can also provide or facilitate the required degree of sealing. For example, the above-quoted passage of the specification clearly indicates that the essentially tight configuration of the encapsulation and cylindrical walls elements can provide the reasonable degree of sealing. This was explained in the Declaration of Anders Lassing, submitted March 14, 2011, in response to the Office Action of September 14, 2010, which described that the seal must merely provide a greater barrier to the flow of overheated water vapor than the combined layers of the conveyor belt in the

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CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

encapsulated stack portion to maintain the vertical flow of vapor, and need not be complete and hermetic. Paragraph 12 of the Declaration. The "tight fit, or seal, can be accomplished through the physical abutment of the structures." Paragraph 11 of the Declaration, referring to the lower ends of the circumferential walls of the encapsulation and the cylindrical walls of the stack. Because the rubber seal is provided as merely one embodiment of an approach to establish a required degree of sealing, the hypothetical gap between the elements in the absence of the rubber seal does not render the claimed invention inoperative. Therefore, Applicants respectfully submit a rubber seal is not an essential element of the claimed invention and the claims are in accordance with the requirements of 35 U.S.C. § 112. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102(b), Onodera Reference

Claims 1, 2, 4, 5, 7, 10-13, 16, and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,118,181, issued to Onodera ("Onodera"). Anticipation requires the presence of each and every claim limitation in a single prior art reference. A claim is anticipated only if each and every element, as set forth in the claim, is found either expressly or inherently in a single prior art reference. *E.g. Verdegaul Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). For the reasons set forth below, Applicants respectfully submit that Onodera does not teach each and every element of Claims 1, 2, 4, 5, 7, 10-13, 16, or 24.

Onodera is directed to a baking apparatus with a ventilative endless belt conveyor that advances along a spiral guide passage at the periphery of a central, rotating drum. Contrary to the Examiner's assertions, Onodera does not teach several elements of Independent Claims 1 and 24. First, Onodera does not teach or remotely suggest an encapsulation or encasement as presently claimed. Specifically, Onodera does not teach "an inner circumferential wall vertically

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CHRISTENSEN O'CONNOR JOHNSON KINDNESS[®]
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

surrounding the end portion of the stack," as recited in Claim 1, and similarly required in Claim 24. The element cited in the Office Action as an "inner wall" in Onodera does not extend to surround any portion of the conveyor stack, but merely contacts the upper and outer edge of a rotary drum 20. Onodera teaches that this drum 20 rotates to advance the conveyor 40 along the spiral guide passage 30. Onodera, column 2, lines 34-36. Furthermore, it is clear from Figure 1 of Onodera that if this element were hypothetically modified to co-extend with any end portion of the stack, it would prohibit the attachment of the conveyor 40 to the drum 20, and would further interrupt the pathway of belt conveyor 40, which needs to pass under the "inner wall" to exit the housing at outlet 11. With specific reference to Claim 24, Onodera does not teach first end edges of outer and inner circumferential walls that are essentially tight against the stack, as recited in Claim 24. In contrast, as explained above, the teaching of Onodera excludes any possibility that the "inner wall," as cited in the Office action, can contact or surround any portion of the conveyor stack because to do so would interrupt the functionality of the invention disclosed therein.

Second, Onodera does not teach or remotely suggest a "conveyor belt having passages for letting a flow of a gaseous medium in the vertical as well as horizontal direction through the stack," as recited in Claims 1 and 24. In sharp contrast, Onodera teaches that air is supplied by the distributing ducts 53 to the housing 10, which travels downwards (vertically) through the conveyor stack 40, and upon exiting the bottom of the conveyor stack 40, flows upwards into the interior of the drum 20 and back into the duct system 50. See Onodera, Figure 1, specifically the air direction indicated by the arrows. Additionally, Figure 3 of Onodera teaches that the exterior wall of the drum is an impermeable structure by illustrating a solid, curved wall with hash marks supporting the axial rods 21.

Third, Onodera does not teach or remotely suggest distinct first and second supplies of gaseous medium, as recited in Claims 1 and 24. In sharp contrast, Onodera teaches only a single supply of gaseous medium to the apparatus. The multiple supplies of gaseous media cited in the Office Action merely refer to the same singular flow of gaseous medium at different stages of passage through the apparatus. As explained above, Onodera teaches that air is supplied by the distributing ducts 53 to the housing 10, which travels downwards (vertically) through the conveyor stack 40, and upon exiting the bottom of the conveyor stack 40, flows upwards into the interior of the drum 20 and back into the duct system 50. See Onodera, Figure 1, arrows indicating the flow of air.

For at least these reasons, Applicants respectfully submit that Onodera does not teach or suggest every element of Claims 1 and 24. Claims 2, 4, 5, 7, 10-13, and 16 depend from Claim 1. Therefore, reconsideration and withdrawal of this rejection for Claims 1, 2, 4, 5, 7, 10-13, 16, and 24 is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102(b), Lang Reference

Claims 1, 5, 7, 10, 12, 13, 18, 22, and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US 5,205,135, to Lang ("Lang"). As indicated above, anticipation requires the presence of each and every claim limitation in a single prior art reference. For the reasons set forth below, Applicants respectfully submit that Onodera does not teach each and every element of Claims 1, 5, 7, 10, 12, 13, 18, 22, and 24.

Lang is directed to a helical conveyor freezer that transports food products through an enclosure with multiple freezing zones. The zones are configured so that the coldest air from the first freezing zone is recirculated to the second freezing zone in a direction opposite to the direction of movement of the food through the enclosure. Contrary to the Examiner's assertions, Lang does not teach several elements of Independent Claims 1, 18, and 24. First, Lang does not

teach or remotely suggest "a first end closure arranged to cover the conveyor belt in its entire helical path, wherein the said first end closure fits tightly against the outer and inner circumferential walls of the encapsulation to permit a seal," as recited in Claims 1 and 18, and required in Claim 24. In sharp contrast, Lang requires a substantial gap between the upper edge of the inner wall 15j and the ceiling / top wall 13a of the enclosure 13 to allow for the passage of the air from the cage 15c to the second cooling zone (i.e. upper section of the stack). A hypothetical connection between the top wall 13 and the inner wall 15j would prevent the gas from being pulled upwards and circulating outwardly as shown by arrows 35 in Figures 2, 3 and 11. See also, e.g., Lang, column 8, lines 29-38. Similarly, regarding Claim 24, Lang does not teach an end closure that "fits tightly against the second end edges of the outer and inner circumferential walls to permit a seal," as claimed. As described above, Lang requires a substantial gap between the upper edge of the inner wall 15j and the ceiling / top wall 13a of the enclosure 13 to allow for the passage of the air from the cage 15c to the second cooling zone (i.e., upper section of the stack).

It is noted that the Office Action indicates that the end closure taught in Lang extends from the enclosure 13a to the fan 23a to permit a seal, and explains that the air flows only in the intended direction. This use of the Lang reference impermissibly conflates two distinct structural elements to assert the teaching of an end closure. First, as support, the Office Action merely recites a putative function of guiding the air flow direction as evidence of the similarity with the present claimed structure. The Office Action provides no rationale for how the two distinct structures can be read as a single end closure structure with sealing characteristics, especially in light of the fact that a fan has moving parts. Second, even if the enclosure 13a and the fan 23a were hypothetically combined to create an end closure, it would still not fit tightly against the inner circumferential wall to permit a seal, as required in the present claims. Instead of

providing a seal, this hypothetical end closure not only permits, but actually facilitates the flow of a considerable amount of gaseous medium between the hypothetical end closure (fan) and the inner cylindrical wall. In fact, the entire volume of air that circulates in the apparatus of Lang is designed to pass between the blades of the fan 23a/top wall 13a (hypothetical end closure) and cylindrical wall 15j. Any degree of sealing, i.e., reduction in the passing of gaseous medium between these structures, would interfere with the functionality of Lang. This belies any sealing by the hypothetical structure, regardless of the hypothetical result proposed in the Office Action. Thus, Lang does not teach an end closure as recited in the present claims.

Second, Lang does not teach or remotely suggest an encapsulation or encasement "extending along substantially the vertical distance of one of the outer circumferential wall or inner circumferential wall," as recited in Claims 1 and 18. In contrast, Lang teaches cylindrical walls 15j and 37, each having a substantial vertical length that is not co-extensive with the other. In this regard, Figures 2 and 3 of Lang illustrate that the outer wall 37 extends upwardly beyond the stack to contact the upper wall 13 to direct the air 35 moving horizontally from the interior downwardly into the stack. The inner wall 15j does not similarly extend to the upper wall 13 to permit this horizontal flow of air 35. Furthermore, the inner wall 15j extends downward to contact a horizontal wall 33, whereas the outer wall 37 only extends downward for a limited distance without contacting the horizontal wall 33 to permit the outward movement of air 41 from the stack. See Lang, Figures 2 and 3, and column 8, lines 29-49. If the inner and outer cylindrical walls of Lang were hypothetically modified to extend along substantially the vertical distance of one of the cylindrical walls, the flow of air into and out of the upper section of the stack would be obstructed, thus interfering with the functionality of the design.

Third, Lang does not teach or remotely suggest distinct first and second supplies of gaseous medium, as recited in Claims 1, 18 and 24. In sharp contrast, Lang teaches a single

source of gaseous medium that circulated within the apparatus. In this regard, the arrows identified by 29, 31, 35, 41, and 43 merely refer to the same supply of air that is being circulated throughout the apparatus in a continuous cycle. See Lang, Figures 2 and 3

Fourth, Lang does not teach or remotely suggest "conveyor belt having passages for letting a flow of a gaseous medium in the vertical as well as horizontal direction through the stack," as recited in Claims 1, 18 and 24. Instead, Lang merely relies on the gaps between the flights of the conveyor belt to permit the horizontal flow of air over the food products supported on the conveyor. There is no specific teaching or suggestion that the conveyor belt itself contains passages for letting a flow of air in the horizontal direction.

For at least these reasons, Applicants respectfully submit that Lang does not teach or suggest every element of Claims 1, 18 and 24. Claims 5, 7, 10, 12, and 13 depend from Claim 1. Claim 22 depends from Claim 18. Therefore, reconsideration and withdrawal of this rejection for Claims 1, 5, 7, 10, 12, 13, 18, 22, and 24 is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 3 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onodera, as applied above to Claim 1, and in further view of U.S. Patent No. 4,582,047, issued to Williams ("Williams"). Claims 2-4, 11, 19-21 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lang, as applied above to Claims 1 and 18, and in further view of Williams. Claims 8, 9 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onodera, as applied above to Claims 1 and 13, and in further view of U.S. Patent No. 5,515,775, issued to Hwang et al. ("Hwang"). Claims 2-4, 8, 9, 14, and 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lang, as applied above to Claims 1, 13 and 18, in further view of Hwang. Claims 15 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Onodera, as applied above to Claim 1, in further view of U.S. Patent No.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS[®]
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

3,412,476, issued to Astrom et al. ("Astrom") or U.S. Patent No. 5,247,810, issued to Fenty ("Fenty"). Claims 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lang, as applied above to Claim 1, in further view of Astrom.

Williams is generally directed to high humidity, high pressure steam cookers with one steam source being an internal boiler on the floor of the cooker, and wherein food products are transported on a continuously moving conveyor belt through the cooker. Hwang is generally directed to an industrial slow cooker wherein food products are continuously transported in a spirally ascending path through a cooking chamber, in which a gaseous medium is circulated without obstruction over the tiers of the conveyor belt. Astrom is generally directed to a cooling plant for food treatment with a conveyor belt following a path with several helical loops. In some embodiments, the helical convolutions are defined by one or more cylinders. Fenty is generally directed to a freezer conveyor with a self supporting conveyor in a helical stack that employs a substantially rigid turntable to support the lower rungs of the helical stack. Fenty teaches that runners can be installed on "part-cylindrical" walls to lift the lowermost tier without requiring transverse support. Fenty, column 5, lines 12-31.

None of Williams, Hwang, Astrom or Fenty remedies the deficiencies of Onodera and Lang, in regard to Claims 1 and 18 as described above. Therefore, Applicants respectfully submit that dependent Claims 2-4, 8-9, 11, 14-21 and 23 are also in condition for allowance. Accordingly, Applicants respectfully request withdrawal of the rejections to these claims.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims are currently in condition for allowance. The Examiner is encouraged to telephone the undersigned with any remaining questions.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



Thomas S. Nowak, Ph.D.
Registration No. 67,998
Direct Dial No. 206.695.1689

TSN:sbk

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100